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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,819	03/09/2004	Koji Tanimoto	T000-P03266US	2031
33356	7590	05/05/2006	EXAMINER	
SoCAL IP LAW GROUP LLP			LU, TONY W	
310 N. WESTLAKE BLVD. STE 120			ART UNIT	
WESTLAKE VILLAGE, CA 91362			PAPER NUMBER	

2878

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/796,819

Applicant(s)

TANIMOTO ET AL.

Examiner

Tony Lu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/16/2005.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 1-41 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-41 of copending Application No. 10/769616. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Claim Objections

Claims 37,38 and 41 are objected to because of the following informalities:

As for claim 37, lines 1-2, there are insufficient antecedent bases for "the enhanced first, second and third color image signals".

As for claim 38, lines 1-2, there are insufficient antecedent bases for "the enhanced first, second and third color image signals".

As for claim 41, line 9, there are insufficient antecedent basis for "the second sensor".

Appropriate corrections and clarifications are required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-15,17-30,32-37,40 and 41 are rejected under 35 U.S.C. 102(e) as being anticipated by Cardot et al US6831761.

With respect to claims 1 and 18, Cardot et al disclose an imaging system and it's process for producing image signals comprising: a first photoconverter(29r) comprising a first array of first light receiving elements(33), the first light receiving elements having first imaging regions(see fig.2A), the first photoconverter for photoelectrically converting light of a first light quality(color red) from a source image(document) for outputting signals by photoelectric conversion; a second photoconverter(27) comprising a second array of second light receiving elements, the second light receiving elements having second imaging regions different from the first imaging regions of the first light receiving elements, the second photoconverter for photoelectrically converting light of a second light quality(grayscale) from the source image for outputting signals by photoelectric conversion.

With respect to claims 2 and 19, per the above discussion, Cardot et al disclose the first light receiving elements have a first dimension(length of the receiving elements) in a first

direction, the second light receiving elements have a second dimension in the first direction, wherein the first dimension is different from the second dimension(see fig.2B).

With respect to claims 3 and 20, per the above discussion, Cardot et al disclose the first direction is a main scanning direction(Horizontal direction with respect to the document).

With respect to claims 4 and 21, per the above discussion, Cardot et al disclose the first direction is a sub-scanning direction(Vertical direction with respect to the document).

With respect to claims 5 and 22, per the above discussion, Cardot et al disclose the first light receiving elements have a third dimension(width of the receiving elements) in a second direction, the second light receiving elements have a fourth dimension in the second direction, wherein the third dimension is different from the fourth dimension.

With respect to claims 6 and 23, per the above discussion, Cardot et al disclose the first dimension is larger than the second dimension and the third dimension is larger than the fourth dimension.

With respect to claims 7 and 24, per the above discussion, Cardot et al disclose the first imaging region is determined according to a first sensitivity of the first light receiving element to the first light quality and the second imaging region is determined according to a second sensitivity of the second light receiving elements to the second light quality.

With respect to claims 8 and 25, per the above discussion, Cardot et al disclose the first array comprising a first number of first light receiving elements and the second array comprising a second number of second light receiving elements, wherein the second number is larger than the first number(see fig.2A and fig.2B).

With respect to claims 9 and 26, per the above discussion, Cardot et al disclose the first light quality comprises a first color(red), the second light quality comprises black and white(grayscale), and further comprising a third photoconverter(29g) comprising a third array of third light receiving elements, the first light receiving elements having third imaging regions, wherein the third photoconverter photoelectrically convert the light of third light quality(green) from the source image for outputting signals by photoelectric conversion and the third light quality comprises a second color(green) different from the first color; and a fourth photoconverter comprising a fourth array of fourth light receiving elements(29b), the fourth light receiving elements having a fourth imaging regions, wherein the fourth photoconverter photoelectrically convert light of a fourth light quality from the source image for outputting signals and the fourth light quality comprising a third color(blue) different from the first color and the second color.

With respect to claims 10 and 27, per the above discussion, Cardot et al disclose the third imaging region and the fourth imaging region have a substantially equal area(see fig.2A).

With respect to claims 11 and 28, per the above discussion, Cardot et al disclose the second number is an integer multiple of the first number(read col.3, lines 55-68).

With respect to claim 12, per the above discussion, Cardot et al disclose an output constitution capable of outputting electric signals of the second light receiving element array and electrical signals generated by photoelectric conversion of the color light receiving element arrays serially in parallel(see fig.3 and fig.4).

With respect to claim 13, per the above discussion, Cardot et al disclose a color mode, wherein the imaging system outputs color signals and monochrome signals(col.6 lines 30-41)

With respect to claims 14 and 29, per the above discussion, Cardot et al disclose a color correction unit for improving a quality of the color signals using information in the monochrome signals(67B, read col.6, 30-41).

With respect to claims 15 and 30, per the above discussion, Cardot et al disclose the color signal correction signal is for improving the color signals' resolution(read col.6, lines 15-42).

With respect to claims 17 and 32, per the above discussion, Cardot et al disclose the color signals are signals of three primary colors and the color signal correction unit is for converting the three primary color signals and the monochrome signals to data indicating color characteristics(read col.5, lines 22-67, col.6, lines 15-41).

With respect to claim 33, Cardot et al disclose a process for producing image signal comprising: receiving a first color image signals from a first color photoconverter(29r) for a first color(red); receiving a second color image signal from a second photoconverter(29g) for a second color(green); receiving a third color image signal from a third color(blue); receiving monochrome image signals from a monochrome photoconverter(27) for black and white(grayscale); and improving a quality of at least one of the first, second, and third color signals using information in the monochrome signals(read col.6, lines 15-42).

With respect to claim 34, per the above discussion, Cardot et al disclose the first color is red, the second color is green, and the third color is blue.

With respect to claim 35, per the above discussion, Cardot et al disclose the first, second and third color image signals represent image information for a first number of pixels, and the monochrome image signals represent image information for a second number of pixels, and the second number is larger than the first number(see fig.2A, and fig.2B).

With respect to claim 36, per the above discussion, Cardot et al disclose improving the quality by obtaining brightness signals(lumance data) from the monochrome image signals; obtaining a first color difference signals(Cr) from the first, second and third color image signals; obtaining a second color difference signals(Cb) from the first, second and third color image signals; obtaining first enhanced first color image signals from the brightness signals and the first color difference signals(Cr from 67B); obtaining enhanced second color image signals(Cb from 67B) from the brightness signals, the first color difference signals and the second color difference signals; obtaining enhanced third color image signals(Y from 67B) from the brightness signals and the first color difference signals(see fig.4).

With respect to claim 37, per the above discussion, Cardot et al disclose wherein the enhanced first, second and third color image signals have improved resolution over the first, second and third color image signals(read col.2, lines 56-68, col.6 lines 15-42, see fig.4).

With respect to claim 40, per the above discussion, Cardot et al disclose an imaging system comprising: a first sensor(27) for photoelectrically converting light from a source image for outputting signals by photoelectric conversion comprising a first array of “n” light receiving elements(see fig.2A) having a first imaging regions which inherently has “m” output terminals for each of said light receiving elements and/or said imaging regions; a second photoconverter(29r,29g,29b) for photoelectrically converting light from the source image for outputting signals by photoelectric conversion and comprising a second array of “j” light receiving elements having second imaging regions and inherently has “k” output terminals for each of said light receiving elements and/or said imaging regions, wherein “m” is greater than or

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equal to “k” if “n” is greater than “j”(see fig.2A, note that 29r has more light receiving elements than 27).

With respect to claim 41, per the above discussion, Cardot et al disclose an imaging system comprising: a first sensor(27) for photoelectrically converting light from a source image(document) for outputting signals by photoelectric conversion and comprising a first array of “n” light receiving elements having first imaging regions(see fig.2A); a second photoconverter(29r,29g,29b) for photoelectrically converting light from the source image for outputting signals by photoelectric conversion and comprising a second array of “j” light receiving elements having second imaging regions; a first clock frequency(from 38, read col.4, lines 25-60) for driving the first sensor; a second clock frequency(from 38) for driving the second photoconverter, wherein the first clock frequency is greater than the second clock frequency when $n > j$ (read col.5, lines 4-21).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16,31,38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cardot et al US6831761.

With respect to claims 16,31 and 38, per the above discussion, although Cardot et al lack a clear teaching of whether or not the color signal correction unit improves the color signal's gradation.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Cardot et al accordingly by improving color signals' gradation in order to provide sufficient color signals and/or desired imaging qualities and/or performances of the imaging system.

With respect to claim 39, per the above discussion, Cardot et al disclose a plurality of sensors(29r,29g,29b,27) are not equally sensitive to all frequency of light(read col.5, lines 4-21), and a control circuit(39) for controlling the receiving time of the plurality of sensors, but Cardot et al lack a clear teaching of specific relations between the sensitivities of the plurality of sensors and the different receiving time.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Cardot et al to differentiate the sensitivities of the plurality of the sensor and control the receiving time of the plurality of the sensors in order to provide more accurate differential output signals from the sensors.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Lu whose telephone number is 5712728448. The examiner can normally be reached on M-F 9:00am- 6:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 5712722328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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